

**Notice of Allowability**

Application No.

09/057,684

Examiner

Alan Diamond

Applicant(s)

HASEGAWA ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the after-final amendment filed April 20, 2005.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☒ Certified copies of the priority documents have been received in Application No. 07/634,054.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 05062005.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The instant claims are fully supported by each of parent applications 08/539,001, 08/193,281, 08/019,177, and 07/634,054, as well as the certified English translation of Japanese foreign priority document 1-341244, which has a filing date of December 28, 1989. Accordingly, the instant claims have a foreign priority date of December 28, 1989. Parent Serial No. 07/634,054 has a U.S. filing date of December 26, 1990. Said December 28, 1989 foreign priority date antedates Jolley (WO 90/12849) which has a publication date of November 1, 1999. Also antedated are Hagihara et al (U.S. Patent 5,202,044), Kaimai (U.S. Patent 5,744,053), and Sato et al (U.S. Patent 5,804,096). Accordingly, neither Jolley, Hagihara et al, Kaimai, nor Sato et al can be used as a reference against the instant claims.

The 35 USC 103(a) rejection of the instant claims over Williamitis (U.S. Patent 2,807,155), in view of Midgley, Jr et al (Re. 19,265), and Slayton (U.S. Patent 4,178,765), the 35 USC 103(a) rejection over Williamitis, in view of Midgley, Jr et al, and Slayton, and further in view of Kohashi et al (JP 62-292895), and the 35 USC 103(a) rejection over Williamitis, in view of Midgley, Jr et al, Slayton, Kohashi et al, and further in view of JP 55-155093 are expressly withdrawn by the Examiner in view of the Rule 1.132 Declaration of Kazuo Tagawa filed April 20, 2005. Comparative Examples 1 and 2 in said Declaration use Base oils 2 and 3, respectively, which are set forth on page 14 of the instant specification. Base oil 2 is pentaerythritol tetra-esterified with 2-ethylhexanoic acid (with no 3,5,5-trimethylhexanoic acid), while Base oil 3 is

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pentaerythritol tetra-esterified with 3,3,5-trimethylhexanoic acid (with no 2-ethylhexanoic acid). The pour points for these two examples are well above the instantly claimed upper limit of  $-10^{\circ}\text{C}$ , i.e. they have pour points of  $0^{\circ}\text{C}$  and  $10^{\circ}\text{C}$ , respectively. Test oil Nos. 1 and 2, which are examples of the instant invention, use a 1:3 and 3:1 molar ratio of 2-ethylhexanoic acid to 3,3,5-trimethylhexanoic acid to tetra-esterify the pentaerythritol. These two oils unexpectedly have much lower pour points of  $-35^{\circ}\text{C}$  and  $-45^{\circ}\text{C}$ , respectively. Additionally, the test oil labeled "Example 1" uses Base oil No. 1, which is on page 14 of the instant specification. Base oil No. 1 is a 1:1 molar ratio of 2-ethylhexanoic acid to 3,3,5-trimethylhexanoic acid and also has an unexpectedly low pour point of  $-45^{\circ}\text{C}$ . A skilled artisan would not have expected that the mixed esters of pentaerythritol with the combination of 2-ethylhexanoic acid and 3,3,5-trimethylhexanoic acid would have such lower pour points compared to pentaerythritol esterified with the individual acids. This unexpectedness is discussed on page 4 of said Declaration. As noted on page 11, lines 6-14, of the instant specification, the instant refrigerator oils should have a pour point not higher than  $-10^{\circ}\text{C}$  to prevent them from solidification at a low temperature. The primary reference Williamitis does provide the pour point for comparative examples (see the tables at col. 3, line 65 through col. 4, line 13). However, Williamitis does not discuss the pour point of its esters, and never specifically mentions esterifying pentaerythritol with the combination of 2-ethylhexanoic acid and 3,3,5-trimethylhexanoic acid.

Furthermore, with respect to Jolley (WO 90/12849), and for the sake of argument, even if Jolley had a publication date prior to the instant December 28, 1989

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foreign priority date, it should be noted that out of the many examples in Jolley, none sets forth an ester within the scope of the ester in the instant claims. Jolley's examples 8-11 use pentaerythritol to form the ester. However, none of these examples uses a combination of 2-ethylhexanoic acid and 3,3,5-trimethylhexanoic acid to esterify the pentaerythritol. Jolley does list 2-ethylhexanoic acid and 3,3,5-trimethylhexanoic acid as acids that can be used to esterify its polyhydroxy compound, and suggests that mixtures of acids can be used (see page 12, line 6 through page 14, line 7, particularly page 14, lines 3-7). However, Jolley never discusses pour point for its ester, and never leads a skilled artisan to the unexpected results obtained when using the ester of pentaerythritol with 2-ethylhexanoic acid and 3,3,5-trimethylhexanoic acid, as is set forth in said Declaration.

Furthermore, the Examiner has reviewed the claims of the Hagihara et al, Kaimai, and Sato et al references noted above, and there is no interference between the instant claims and the claims of these U.S. patents. Like Jolley, these U.S. patents do not lead a skilled artisan to the unexpected results set forth in said Declaration.

The following references are hereby made of record: US 5,279,752, US 5,391,311, US 5,464,550, US 5,512,198, US 5,746,933, US 6,207,071, US 6,251,300, US 6,263,683, US 2002/0193262, US 2003/0166478, US 6,667,285, US 6,759,373, US 2004/0167042, US 6,828,286, and EP 514988 A2.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 571-272-1338. The examiner can normally be reached on Monday through Friday, 5:30 a.m. to 2:00 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alan Diamond  
Primary Examiner  
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Alan Diamond  
May 6, 2005

A handwritten signature in black ink, appearing to read 'Alan Diamond', followed by a horizontal line.